COVID-19

Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic

Updated Mar. 18, 2024

> The recommendations in this guidance continue to apply after the expiration of the federal COVID-19 Public Health Emergency.

> For healthcare personnel, see Isolation and work restriction guidance. For strategies to mitigate healthcare personnel staffing shortages, see Contingency and crisis management. For healthcare professionals advising people in non-healthcare settings about isolation for laboratory-confirmed COVID-19, see Preventing Spread of Respiratory Viruses When You're Sick.

Summary of Recent Changes

Updates as of May 8, 2023

- Updated recommendations for universal source control and admission testing in nursing homes
- Added Appendix to assist facilities with how and when to implement broader use of source control, including examples of potential metrics

Key Points

- This guidance applies to all U.S. settings where healthcare is delivered, including nursing homes and home health.

Introduction

This interim guidance has been updated based on currently available information about COVID-19 and the current situation in the United States. Updates were made to reflect the high levels of vaccine-and infection-induced immunity and the availability of effective treatments and prevention tools. This guidance provides a framework for facilities to implement select infection prevention and control practices (e.g., universal source control) based on their individual circumstances (e.g., levels of respiratory virus transmission in the community).

This guidance is applicable to all U.S. settings where healthcare is delivered (including nursing homes and home health). **This guidance is not intended for non-healthcare settings (e.g., restaurants) and not for persons outside of healthcare settings.** CDC's main landing page for COVID-19 content will help readers navigate to information regarding modes of transmission, clinical management, laboratory settings, COVID-19 vaccines and CDC guidance on other COVID-19-related topics.

Employers should be aware that other local, territorial, tribal, state, and federal requirements may apply, including those promulgated by the Occupational Safety and Health Administration (OSHA).

Implications for the Community Transmission Metric with the End of the Public Health Emergency

With the end of the federal COVID-19 Public Health Emergency (PHE) on May 11, 2023, CDC will no longer receive data needed to publish Community Transmission levels for SARS-CoV-2. This metric informed CDC's recommendations for broader use of source control in healthcare facilities to allow for earlier intervention, to avoid strain on a healthcare system, and to better protect individuals seeking care in these settings.

As described in CDC's Core IPC Practices, source control remains an important intervention during periods of higher respiratory virus transmission. Without the Community Transmission metric, healthcare facilities should identify local metrics that could reflect increasing community respiratory viral activity to determine when broader use of source control in the facility might be warranted (See Appendix).

1. Recommended routine infection prevention and control (IPC) practices during the COVID-19 pandemic

Encourage everyone to remain up to date with all recommended COVID-19 vaccine doses.

- HCP, patients, and visitors should be offered resources and counseled about the importance of receiving the COVID-19 vaccine.

Establish a Process to Identify and Manage Individuals with Suspected or Confirmed SARS-CoV-2 Infection

- Ensure everyone is aware of recommended IPC practices in the facility.
  - Post visual alerts (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, cafeterias). These alerts should include instructions about current IPC recommendations (e.g., when to use source control and perform hand hygiene). Dating these alerts can help ensure people know that they reflect current recommendations.
- Establish a process to make everyone entering the facility aware of recommended actions to prevent transmission to others if they have any of the following three criteria:
  - 1) a positive viral test for SARS-CoV-2
  - 2) symptoms of COVID-19, or
  - 3) close contact with someone with SARS-CoV-2 infection (for patients and visitors) or a higher-risk exposure (for healthcare personnel (HCP).
    - For example:

- Instruct HCP to report any of the 3 above criteria to occupational health or another point of contact designated by the facility so these HCP can be properly managed.
  - The definition of higher-risk exposure and recommendations for evaluation and work restriction of these HCP are in the Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2.
- Provide guidance (e.g., posted signs at entrances, instructions when scheduling appointments) about recommended actions for patients and visitors who have any of the above three criteria.
  - Patients should be managed as described in Section 2.
  - Visitors with confirmed SARS-CoV-2 infection or compatible symptoms should defer non-urgent in-person visitation until they have met the healthcare criteria to end isolation (see Section 2); this time period is longer than what is recommended in the community. For visitors who have had close contact with someone with SARS-CoV-2 infection or were in another situation that put them at higher risk for transmission, it is safest to defer non-urgent in-person visitation until 10 days after their close contact if they meet any of the criteria described in Section 2 (e.g., cannot wear source control).
    - Additional information about visitation from the Centers for Medicare & Medicaid Services (CMS) is available at Policy & Memos to States and Regions | CMS .

Implement Source Control Measures

Source control refers to use of respirators or well-fitting facemasks or cloth masks to cover a person's mouth and nose to prevent spread of respiratory secretions when they are breathing, talking, sneezing, or coughing. Masks and respirators also offer varying levels of protection to the wearer. Further information about types of masks and respirators, including those that meet standards and the degree of protection offered to the wearer, is available at: Masks and Respirators. People, particularly those at high risk for severe illness, should wear the most protective mask or respirator they can that fits well and that they will wear consistently.

Even when a facility does not require masking for source control, it should allow individuals to use a mask or respirator based on personal preference, informed by their perceived level of risk for infection based on their recent activities (e.g., attending crowded indoor gatherings with poor ventilation) and their potential for developing severe disease if they are exposed.

Source control options for HCP include:

- A NIOSH Approved® particulate respirator with N95® filters or higher;
- A respirator approved under standards used in other countries that are similar to NIOSH Approved N95 filtering facepiece respirators (Note: These should not be used instead of a NIOSH Approved respirator when respiratory protection is indicated);
- A barrier face covering that meets ASTM F3502-21 requirements including Workplace Performance and Workplace Performance Plus masks; OR
- A well-fitting facemask.

When used solely for source control, any of the options listed above could be used for an entire shift unless they become soiled, damaged, or hard to breathe through. If they are used during the care of patient for which a NIOSH Approved respirator or facemask is indicated for personal protective equipment (PPE) (e.g., NIOSH Approved particulate respirators with N95 filters or higher during the care of a patient with SARS-CoV-2 infection, facemask during a surgical procedure or during care of a patient on Droplet Precautions), they should be removed and discarded after the patient care encounter and a new one should be donned.

Source control is recommended for individuals in healthcare settings who:

- Have suspected or confirmed SARS-CoV-2 infection or other respiratory infection (e.g., those with runny nose, cough, sneeze); or
- Had close contact (patients and visitors) or a higher-risk exposure (HCP) with someone with SARS-CoV-2 infection, for 10 days after their exposure

Source control is recommended more broadly as described in CDC's Core IPC Practices in the following circumstances:

- By those residing or working on a unit or area of the facility experiencing a SARS-CoV-2 or other outbreak of respiratory infection; universal use of source control could be discontinued as a mitigation measure once the outbreak is over (e.g., no new cases of SARS-CoV-2 infection have been identified for 14 days); or
- Facility-wide or, based on a facility risk assessment, targeted toward higher risk areas (e.g., emergency departments, urgent care) or patient populations (e.g., when caring for patients with moderate to severe immunocompromise) during periods of higher levels of community SARS-CoV-2 or other respiratory virus transmission (See Appendix)
- Have otherwise had source control recommended by public health authorities (e.g., in guidance for the community when COVID-19 hospital admission levels are high)

Implement Universal Use of Personal Protective Equipment for HCP

If SARS-CoV-2 infection is not suspected in a patient presenting for care (based on symptom and exposure history), HCP should follow Standard Precautions (and Transmission-Based Precautions if required based on the suspected diagnosis).

As SARS-CoV-2 transmission in the community increases, the potential for encountering asymptomatic or pre-symptomatic patients with SARS-CoV-2 infection also likely increases. In these circumstances, healthcare facilities should consider implementing broader use of respirators and eye protection by HCP during patient care encounters as described below.

NIOSH Approved particulate respirators with N95 filters or higher used for:

- All aerosol-generating procedures (refer to Which procedures are considered aerosol generating procedures in healthcare settings?).
- All surgical procedures that might pose higher risk for transmission if the patient has SARS-CoV-2 infection (e.g., that generate potentially infectious aerosols or involving anatomic regions where viral loads might be higher, such as the nose and throat, oropharynx, respiratory tract).
- NIOSH Approved particulate respirators with N95 filters or higher can also be used by HCP working in other situations where additional risk factors for transmission are present, such as when the patient is unable to use source control and the area is poorly ventilated. They may also be considered if healthcare-associated SARS-CoV-2 transmission is identified and universal respirator use by HCP working in affected areas is not already in place.
- To simplify implementation, facilities in counties with higher levels of SARS-CoV-2 transmission may consider implementing universal use of NIOSH Approved particulate respirators with N95 filters or higher for HCP during all patient care encounters or in specific units or areas of the facility at higher risk for SARS-CoV-2 transmission.

- Eye protection (i.e., goggles or a face shield that covers the front and sides of the face) worn during all patient care encounters.

Optimize the Use of Engineering Controls and Indoor Air Quality

- Optimize the use of engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals (e.g., physical barriers at reception / triage locations and dedicated pathways to guide symptomatic patients through waiting rooms and triage areas).
- Take measures to limit crowding in communal spaces, such as scheduling appointments to limit the number of patients in waiting rooms or treatment areas.
- Explore options, in consultation with facility engineers, to improve ventilation delivery and indoor air quality in patient rooms and all shared spaces.

- Guidance on ensuring that ventilation systems are operating properly, and other options for improving indoor air quality, are available in the following resources:
  - Guidelines for Environmental Infection Control in Health-Care Facilities
  - American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) resources for healthcare facilities , which also provides COVID-19 technical resources for healthcare facilities
  - Ventilation in Buildings, which includes options for non-clinical spaces in healthcare facilities

Perform SARS-CoV-2 Viral Testing

- Anyone with even mild symptoms of COVID-19, **regardless of vaccination status**, should receive a viral test for SARS-CoV-2 as soon as possible.
- Asymptomatic patients with close contact with someone with SARS-CoV-2 infection should have a series of three viral tests for SARS-CoV-2 infection. Testing is recommended immediately (but not earlier than 24 hours after the exposure) and, if negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test. This will typically be at day 1 (where day of exposure is day 0), day 3, and day 5.
  - Due to challenges in interpreting the result, testing is generally not recommended for asymptomatic people who have recovered from SARS-CoV-2 infection in the prior 30 days. Testing should be considered for those who have recovered in the prior 31-90 days; however, an antigen test instead of a nucleic acid amplification test (NAAT) is recommended. This is because some people may remain NAAT positive but not be infectious during this period.
  - Guidance for work restrictions, including recommended testing for HCP with higher-risk exposures, are in the Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2.
  - Guidance for use of empiric Transmission-Based Precautions for patients with close contact with someone with SARS-CoV-2 infection are described in Section 2.
- Testing considerations for healthcare facilities with an outbreak of SARS-CoV-2 are described below.
- The yield of screening testing for identifying asymptomatic infection is likely lower when performed on those in areas with lower levels of SARS-CoV-2 community transmission. However, these results might continue to be useful in some situations (e.g., when performing higher-risk procedures, admitting/caring for patients who are moderately to severely immunocompromised, or for the HCP caring for such patients) to inform the type of infection control precautions used (e.g., room assignment/cohorting, or PPE used) and prevent unprotected exposures. If implementing a screening testing program, testing decisions should not be based on the vaccination status of the individual being screened. To provide the greatest assurance that someone does not have SARS-CoV-2 infection, if using an antigen test instead of a NAAT, facilities should use 3 tests, spaced 48 hours apart, in line with FDA recommendations .
  - In general, performance of pre-procedure or pre-admission testing is at the discretion of the facility.
  - Performance of expanded screening testing of asymptomatic HCP without known exposures is at the discretion of the facility.

Create a Process to Respond to SARS-CoV-2 Exposures Among HCP and Others

Healthcare facilities should have a plan for how SARS-CoV-2 exposures in a healthcare facility will be investigated and managed and how contact tracing will be performed.

If healthcare-associated transmission is suspected or identified, facilities might consider expanded testing of HCP and patients as determined by the distribution and number of cases throughout the facility and ability to identify close contacts. For example, in an outpatient dialysis facility with an open treatment area, testing should ideally include all patients and HCP. Depending on testing resources available or the likelihood of healthcare-associated transmission, facilities may elect to initially expand testing only to HCP and patients on the affected units or departments, or a particular treatment schedule or shift, as opposed to the entire facility. If an expanded testing approach is taken and testing identifies additional infections, testing should be expanded more broadly. If possible, testing should be repeated every 3-7 days until no new cases are identified for at least 14 days.

Guidance for outbreak response in nursing homes is described in setting-specific considerations below.

Healthcare facilities responding to SARS-CoV-2 transmission within the facility should always notify and follow the recommendations of public health authorities.

2. Recommended infection prevention and control (IPC) practices when caring for a patient with suspected or confirmed SARS-CoV-2 infection

The IPC recommendations described below (e.g., patient placement, recommended PPE) also apply to patients with symptoms of COVID-19 (even before results of diagnostic testing) and asymptomatic patients who have met the criteria for empiric Transmission-Based Precautions based on close contact with someone with SARS-CoV-2 infection. However, these patients should NOT be cohorted with patients with confirmed SARS-CoV-2 infection unless they are confirmed to have SARS-CoV-2 infection through testing.

Duration of Empiric Transmission-Based Precautions for Symptomatic Patients being Evaluated for SARS-CoV-2 infection

The decision to discontinue empiric Transmission-Based Precautions by excluding the diagnosis of current SARS-CoV-2 infection for a patient with symptoms of COVID-19 can be made based upon having negative results from at least one viral test.

- If using NAAT (molecular), a single negative test is sufficient in most circumstances. If a higher level of clinical suspicion for SARS-CoV-2 infection exists, consider maintaining Transmission-Based Precautions and confirming with a second negative NAAT.
- If using an antigen test, a negative result should be confirmed by either a negative NAAT (molecular) or second negative antigen test taken 48 hours after the first negative test.

If a patient suspected of having SARS-CoV-2 infection is never tested, the decision to discontinue Transmission-Based Precautions can be made based on time from symptom onset as described in the Isolation section below. Ultimately, clinical judgment and suspicion of SARS-CoV-2 infection determine whether to continue or discontinue empiric Transmission-Based Precautions.

Duration of Empiric Transmission-Based Precautions for Asymptomatic Patients following Close Contact with Someone with SARS-CoV-2 Infection

In general, asymptomatic patients do not require empiric use of Transmission-Based Precautions while being evaluated for SARS-CoV-2 following close contact with someone with SARS-CoV-2 infection. These patients should still wear source control and those who have not recovered from SARS-CoV-2 infection in the prior 30 days should be tested as described in the testing section.

Examples of when empiric Transmission-Based Precautions following close contact may be considered include:

- Patient is unable to be tested or wear source control as recommended for the 10 days following their exposure
- Patient is moderately to severely immunocompromised
- Patient is residing on a unit with others who are moderately to severely immunocompromised
- Patient is residing on a unit experiencing ongoing SARS-CoV-2 transmission that is not controlled with initial interventions

Patients placed in empiric Transmission-Based Precautions based on close contact with someone with SARS-CoV-2 infection should be maintained in Transmission-Based Precautions for the following time periods.

- Patients can be removed from Transmission-Based Precautions after day 7 following the exposure (count the day of exposure as day 0) if they do not develop symptoms and all viral testing as described for asymptomatic individuals following close contact is negative.

- If viral testing is not performed, patients can be removed from Transmission-Based Precautions after day 10 following the exposure (count the day of exposure as day 0) if they do not develop symptoms.

Patient Placement

- Place a patient with suspected or confirmed SARS-CoV-2 infection in a single-person room. The door should be kept closed (if safe to do so). Ideally, the patient should have a dedicated bathroom.
  - If cohorting, only patients with the same respiratory pathogen should be housed in the same room. MDRO colonization status and/or presence of other communicable disease should also be taken into consideration during the cohorting process.
- Facilities could consider designating entire units within the facility, with dedicated HCP, to care for patients with SARS-CoV-2 infection when the number of patients with SARS-CoV-2 infection is high. Dedicated means that HCP are assigned to care only for these patients during their shifts. Dedicated units and/or HCP might not be feasible due to staffing crises or a small number of patients with SARS-CoV-2 infection.
- Limit transport and movement of the patient outside of the room to medically essential purposes.
- Communicate information about patients with suspected or confirmed SARS-CoV-2 infection to appropriate personnel before transferring them to other departments in the facility (e.g., radiology) and to other healthcare facilities.

Personal Protective Equipment

- HCP who enter the room of a patient with suspected or confirmed SARS-CoV-2 infection should adhere to Standard Precautions and use a NIOSH Approved particulate respirator with N95 filters or higher , gown, gloves, and eye protection (i.e., goggles or a face shield that covers the front and sides of the face).
- Respirators should be used in the context of a comprehensive respiratory protection program, which includes medical evaluations, fit testing and training in accordance with the Occupational Safety and Health Administration's (OSHA) Respiratory Protection standard (29 CFR 1910.134)
- Additional information about using PPE is available in Protecting Healthcare Personnel

Aerosol-Generating Procedures (AGPs)

- Procedures that could generate infectious aerosols should be performed cautiously and avoided if appropriate alternatives exist.
- AGPs should take place in an airborne infection isolation room (AIIR), if possible.
- The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.

Visitation

- For the safety of the visitor, in general, patients should be encouraged to limit in-person visitation while they are infectious. However, facilities should adhere to local, territorial, tribal, state, and federal regulations related to visitation. Additional information about visitation from the Centers for Medicare & Medicaid Services (CMS) is available at Policy & Memos to States and Regions | CMS .
  - Counsel patients and their visitor(s) about the risks of an in-person visit.
  - Encourage use of alternative mechanisms for patient and visitor interactions such as video-call applications on cell phones or tablets, when appropriate.
- Facilities should provide instruction, before visitors enter the patient's room, on hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy.
- Visitors should be instructed to only visit the patient room. They should minimize their time spent in other locations in the facility.

Duration of Transmission-Based Precautions for Patients with SARS-CoV-2 Infection

The following are criteria to determine when Transmission-Based Precautions could be discontinued for patients with SARS-CoV-2 infection and are influenced by severity of symptoms and presence of immunocompromising conditions. Patients should self-monitor and seek re-evaluation if symptoms recur or worsen. If symptoms recur (e.g., rebound), these patients should be placed back into isolation until they again meet the healthcare criteria below to discontinue Transmission-Based Precautions for SARS-CoV-2 infection unless an alternative diagnosis is identified.

In general, patients who are hospitalized for SARS-CoV-2 infection should be maintained in Transmission-Based Precautions for the time period described for patients with severe to critical illness.

In general, patients should continue to wear source control until symptoms resolve or, for those who never developed symptoms, until they meet the criteria to end isolation below. Then they should revert to usual facility source control policies for patients.

Patients with mild to moderate illness who are *not* moderately to severely immunocompromised:

- At least 10 days have passed *since symptoms first appeared* **and**
- At least 24 hours have passed *since last fever* without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved

Patients who were asymptomatic throughout their infection and are *not* moderately to severely immunocompromised:

- At least 10 days have passed since the date of their first positive viral test.

Patients with severe to critical illness and who are *not* moderately to severely immunocompromised:

- At least 10 days and up to 20 days have passed *since symptoms first appeared* **and**
- At least 24 hours have passed *since last fever* without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved
- The test-based strategy as described for moderately to severely immunocompromised patients below can be used to inform the duration of isolation.

The exact criteria that determine which patients will shed replication-competent virus for longer periods are not known. Disease severity factors and the presence of immunocompromising conditions should be considered when determining the appropriate duration for specific patients. For a summary of the literature, refer to Preventing Spread of Respiratory Viruses When You're Sick

Patients who are moderately to severely immunocompromised may produce replication-competent virus beyond 20 days after symptom onset or, for those who were asymptomatic throughout their infection, the date of their first positive viral test.

- Use of a test-based strategy and (if available) consultation with an infectious disease specialist is recommended to determine when Transmission-Based Precautions could be discontinued for these patients.

The criteria for the test-based strategy are:

Patients who are symptomatic:

- Resolution of fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved, **and**
- Results are negative from at least two consecutive respiratory specimens collected 48 hours apart (total of two negative specimens) tested using an antigen test or NAAT

Patients who are not symptomatic:

- Results are negative from at least two consecutive respiratory specimens collected 48 hours apart (total of two negative specimens) tested using an antigen test or NAAT

Environmental Infection Control

- Dedicated medical equipment should be used when caring for a patient with suspected or confirmed SARS-CoV-2 infection.
  - All non-dedicated, non-disposable medical equipment used for that patient should be cleaned and disinfected according to manufacturer's instructions and facility policies before use on another patient.
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which AGPs are performed.
  - Refer to List N on the EPA website for EPA-registered disinfectants that kill SARS-CoV-2; the disinfectant selected should also be appropriate for other pathogens of concern at the facility (e.g., a *difficile* sporicidal agent is recommended to disinfect the rooms of patients with *C. difficile* infection).
- Management of laundry, food service utensils, and medical waste should be performed in accordance with routine procedures.
- Once the patient has been discharged or transferred, HCP, including environmental services personnel, should refrain from entering the vacated room without all recommended PPE until sufficient time has elapsed for enough air changes to remove potentially infectious particles [more information (to include important footnotes on its application) on clearance rates under differing ventilation conditions is available]. After this time has elapsed, the room should undergo appropriate cleaning and surface disinfection before it is returned to routine use.

3. Setting-specific considerations

In addition to the recommendations described in the guidance above, here are additional considerations for the settings listed below.

Dialysis Facilities

Considerations for Patient Placement

- Patients on dialysis with suspected or confirmed SARS-CoV-2 infection or who have reported close contact should be dialyzed in a separate room with the door closed.
  - Hepatitis B isolation rooms can be used if: 1) the patient is hepatitis B surface antigen-positive or 2) the facility has no patients on the census with hepatitis B infection who would require treatment in the isolation room.
- If a separate room is not available, patients with confirmed SARS-CoV-2 infection should be cohorted to a specific well-ventilated unit or shift (e.g., consider the last shift of the day). Only patients with confirmed SARS-CoV-2 infection should be cohorted together:
  - In the context of an outbreak or an increase in the number of confirmed SARS-CoV-2 infections at the facility, if a separate shift or unit is not initially available, efforts should be made to create specific shifts or units for patients with confirmed SARS-CoV-2 infection to separate them from patients without SARS-CoV-2 infection.

Additional Guidance for Use of Isolation Gowns

- When caring for patients with suspected or confirmed SARS-CoV-2 infection, gowns should be worn over or instead of the cover gown (e.g., laboratory coat, gown, or apron with incorporate sleeves) that is normally worn by hemodialysis personnel.

Cleaning and Disinfecting Dialysis Stations

- Current procedures for routine cleaning and disinfection of dialysis stations are appropriate for patients with SARS-CoV-2 infection.
- Internal disinfection of dialysis machines is not required immediately after use unless otherwise indicated (e.g., post-blood leak). It should be done according to the dialysis machine manufacturer's instructions (e.g., at the end of the day).

Emergency Medical Services

Considerations for vehicle configuration when transporting a patient with suspected or confirmed SARS-CoV-2 infection

- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
  - Before entering the isolated driver's compartment, the driver (if they were involved in direct patient care) should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
  - Close the door/window between these compartments before bringing the patient on board.
  - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
  - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
  - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through high-efficiency particulate air (HEPA) filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) Health Hazard Evaluation Report 95–0031–2601 pdf .
  - After patient unloading, allowing a few minutes with ambulance module doors open will rapidly dilute airborne viral particles.
- If a vehicle without an isolated driver compartment must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting to create a pressure gradient toward the patient area.
  - Before entering the driver's compartment, the driver (if they were involved in direct patient care) should remove their gown, gloves and eye protection and perform hand hygiene to avoid soiling the compartment. They should continue to wear their NIOSH Approved particulate respirator with N95 filters or higher.

Additional considerations when performing AGPs on patients with suspected or confirmed SARS-CoV-2 infection:

- If possible, consult with medical control before performing AGPs for specific guidance.
- Bag valve masks (BVMs) and other ventilatory equipment should be equipped with HEPA filtration to filter expired air.
- EMS systems should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- If possible, the rear doors of the stationary transport vehicle should be opened and the HVAC system should be activated during AGPs. This should be done away from pedestrian traffic.
- If possible, discontinue AGPs prior to entering the destination facility or communicate with receiving personnel that AGPs are being implemented.

Dental Facilities

- Dental healthcare personnel (DHCP) should regularly consult their state dental boards and state or local health departments for current information and recommendations and requirements specific to their jurisdictions.
- Patients with suspected or confirmed SARS-CoV-2 infection should postpone all non-urgent dental treatment until they meet criteria to discontinue Transmission-Based Precautions. Because dental patients cannot wear a mask, in general, those who have had close contact with someone with SARS-CoV-2 infection should also postpone all non-urgent dental treatment until they meet the healthcare criteria to end quarantine.
  - Dental care for these patients should only be provided if medically necessary. Follow all recommendations for care and placement for patients with suspected or confirmed SARS-CoV-2 infection. Extra attention may be

required to ensure HVAC ventilation to the dental treatment area does not reduce or deactivate during occupancy based on temperature demands.

  - If a patient has a fever strongly associated with a dental diagnosis (e.g., pulpal and periapical dental pain and intraoral swelling are present) but no other symptoms consistent with COVID-19 are present, dental care can be provided following the practices recommended for routine health care during the pandemic.

- When performing aerosol-generating procedures on patients who are not suspected or confirmed to have SARS-CoV-2 infection, ensure that DHCP correctly wear the recommended PPE (including consideration of a NIOSH Approved particulate respirator with N95 filters or higher as SARS-CoV-2 community transmission increases) and use mitigation methods such as four-handed dentistry, high evacuation suction, and dental dams to minimize droplet spatter and aerosols.
  - Commonly used dental equipment known to create aerosols and airborne contamination include ultrasonic scaler, high-speed dental handpiece, air/water syringe, air polishing, and air abrasion.
- Dental treatment should be provided in individual patient rooms whenever possible with the HVAC in constant ventilation mode.
- For dental facilities with open floor plans, strategies to prevent the spread of pathogens include:
  - At least 6 feet of space between patient chairs.
  - Adjunct use of portable HEPA air filtration systems to enhance air cleaning
  - Physical barriers between patient chairs. Easy-to-clean floor-to-ceiling barriers will enhance effectiveness of portable HEPA air filtration systems (check to make sure that extending barriers to the ceiling will not interfere with fire sprinkler systems).
  - Operatories oriented parallel to the direction of airflow when possible.
  - Where feasible, consider patient orientation carefully, placing the patient's head near the return air vents, away from pedestrian corridors, and toward the rear wall when using vestibule-type office layouts.
- Ensure to account for the time required to clean and disinfect operatories between patients when calculating your daily patient volume.

Nursing Homes

- Assign one or more individuals with training in IPC to provide on-site management of the IPC program
  - This should be a full-time role for at least one person in facilities that have more than 100 residents or that provide on-site ventilator or hemodialysis services. Smaller facilities should consider staffing the IPC program based on the resident population and facility service needs identified in the IPC risk assessment.
- Stay connected with the healthcare-associated infection program in your state health department, as well as your local health department, and their notification requirements. Report SARS-CoV-2 infection data to National Healthcare Safety Network (NHSN) Long-term Care Facility (LTCF) COVID-19 Module. See Centers for Medicare & Medicaid Services (CMS) COVID-19 reporting requirements .
- Managing admissions and residents who leave the facility:
  - Admission testing is at the discretion of the facility. Pros and cons of screening testing are described in Section 1.
  - Residents who leave the facility for 24 hours or longer should generally be managed as an admission.

- Empiric use of Transmission-Based Precautions is generally not necessary for admissions or for residents who leave the facility for less than 24 hours (e.g., for medical appointments, community outings) and do not meet criteria described in Section 2.
- Placement of residents with suspected or confirmed SARS-CoV-2 infection
  - Ideally, residents should be placed in a single-person room as described in Section 2.
  - If limited single rooms are available, or if numerous residents are simultaneously identified to have known SARS-CoV-2 exposures or symptoms concerning for COVID-19, residents should remain in their current location.
- Responding to a newly identified SARS-CoV-2-infected HCP or resident
  - When performing an outbreak response to a known case, facilities should always defer to the recommendations of the jurisdiction's public health authority.

- A single new case of SARS-CoV-2 infection in any HCP or resident should be evaluated to determine if others in the facility could have been exposed.
- The approach to an outbreak investigation could involve either contact tracing or a broad-based approach; however, a broad-based (e.g., unit, floor, or other specific area(s) of the facility) approach is preferred if all potential contacts cannot be identified or managed with contact tracing or if contact tracing fails to halt transmission.
- Perform testing for all residents and HCP identified as close contacts or on the affected unit(s) if using a broad-based approach, regardless of vaccination status.
    - Testing is recommended immediately (but not earlier than 24 hours after the exposure) and, if negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test. This will typically be at day 1 (where day of exposure is day 0), day 3, and day 5.
    - Due to challenges in interpreting the result, testing is generally not recommended for asymptomatic people who have recovered from SARS-CoV-2 infection in the prior 30 days. Testing should be considered for those who have recovered in the prior 31-90 days; however, an antigen test instead of a nucleic acid amplification test (NAAT) is recommended. This is because some people may remain NAAT positive but not be infectious during this period.
- Empiric use of Transmission-Based Precautions for residents and work restriction for HCP are not generally necessary unless residents meet the criteria described in Section 2 or HCP meet criteria in the Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2, respectively. However, source control should be worn by all individuals being tested.
    - In the event of ongoing transmission within a facility that is not controlled with initial interventions, strong consideration should be given to use of Empiric use of Transmission-Based Precautions for residents and work restriction of HCP with higher-risk exposures. In addition, there might be other circumstances for which the jurisdiction's public authority recommends these and additional precautions.
    - If no additional cases are identified during contact tracing or the broad-based testing, no further testing is indicated. Empiric use of Transmission-Based Precautions for residents and work restriction for HCP who met criteria can be discontinued as described in Section 2 and the Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2, respectively.
    - If additional cases are identified, strong consideration should be given to shifting to the broad-based approach if not already being performed and implementing quarantine for residents in affected areas of the facility. As part of the broad-based approach, testing should continue on affected unit(s) or facility-wide every 3-7 days until there are no new cases for 14 days.
        - If antigen testing is used, more frequent testing (every 3 days), should be considered.
- **Indoor visitation during an outbreak response:**
    - Facilities should follow guidance from CMS about visitation.
    - Visitors should be counseled about their potential to be exposed to SARS-CoV-2 in the facility.
    - If indoor visitation is occurring in areas of the facility experiencing transmission, it should ideally occur in the resident's room. The resident and their visitors should wear well-fitting source control (if tolerated) and physically distance (if possible) during the visit.

Assisted Living, Group Homes and Other Residential Care Settings (excluding nursing homes)

In general, long-term care settings (excluding nursing homes) whose staff provide non-skilled personal care* similar to that provided by family members in the home (e.g., many assisted livings, group homes), should follow community prevention strategies based on COVID-19 hospital admission levels, similar to independent living, retirement communities or other non-healthcare congregate settings. Residents should also be counseled about strategies to protect themselves and others, including recommendations for source control if they are immunocompromised or at high risk for severe disease. CDC has information and resources for older adults and for people with disabilities.

Visiting or shared healthcare personnel who enter the setting to provide healthcare to one or more residents (e.g., physical therapy, wound care, intravenous injections, or catheter care provided by home health agency nurses) should follow the healthcare IPC recommendations in this guidance. In addition, if staff in a residential care setting are providing in-person services for a resident with SARS-CoV-2 infection, they should be familiar with recommended IPC practices to protect themselves and others from potential exposures including the hand hygiene, personal protective equipment and cleaning and disinfection practices outlined in this guidance.

*Non-skilled personal care consists of any non-medical care that can reasonably and safely be provided by non-licensed caregivers, such as help with daily activities like bathing and dressing; it may also include the kind of health-related care that most people do themselves, like taking oral medications. In some cases where care is received at home or a residential setting, care can also include help with household duties such as cooking and laundry.

Appendix

Considerations for Implementing Broader Use of Masking in Healthcare Settings

Introduction:

Use of well-fitting masks in healthcare settings are an important strategy to prevent the spread of respiratory viruses. Well-fitting masks can help block virus particles from reaching the nose and mouth of the wearer (wearer protection) and, if someone is ill, help block virus particles coming out of their nose and mouth from reaching others (source control). Masking by healthcare personnel as part of Standard and Transmission-Based Precautions and by ill individuals as part of respiratory hygiene and cough etiquette (i.e., for people with symptoms) are already well-described. This appendix describes considerations for implementing broader use of masking in healthcare settings. However, even when masking is not required by the facility, individuals should continue using a mask or respirator based on personal preference, informed by their perceived level of risk for infection based on their recent activities (e.g., attending crowded indoor gatherings with poor ventilation) and their potential for developing severe disease if they are exposed.

When to Implement Broader Use of Masking

The overall benefit of broader masking is likely to be the greatest for patients at higher risk for severe outcomes from respiratory virus infection and during periods of high respiratory virus transmission in the community.

Facilities should consider several factors when determining how and when to implement broader mask use:

- The types of patients cared for in their facility.
  - Facilities might tier their interventions based on the population they serve. For example, facilities might consider a lower threshold for action in areas of the facility primarily caring for patients at highest risk for severe outcomes (e.g., cancer clinics, transplant units) or in areas more likely to provide care for patients with a respiratory infection (e.g., urgent care, emergency department). Except when experiencing an outbreak within the facility, facilities with residents or patients that generally do not leave the facility might consider implementing masking only for staff and visitors
- Input from stakeholders.
  - Reviewing plans with stakeholders including patient and family groups and healthcare personnel can help a facility determine practices that will be more broadly supported.
- Plans from other facilities in the jurisdiction with whom the facility shares patients.
  - Some jurisdictions might consider a coordinated approach for all facilities in the jurisdiction.
- What data are available to make decisions.
  - Facilities and jurisdictions might have access to more granular data for their jurisdiction to help guide efforts locally

Metrics for Community Respiratory Virus Transmission

CDC is in the early stages of developing metrics that could be used to guide when to implement select infection prevention and control practices for multiple respiratory viruses. However, at this time there are some general metrics that could be used to help facilities make decisions about community respiratory virus incidence. Data on the exact metric thresholds that correspond with a higher risk for transmission are lacking. In addition, data from these systems are generally not available for all jurisdictions.

Some facilities might consider recommending masking during the typical respiratory virus season (approximately October-April).

Facilities could also follow national data on trends of several respiratory viruses.

- **SARS-CoV-2 Specific Metrics**
  During the COVID-19 pandemic one of the strongest indicators of increasing cases in nursing homes was increasing community incidence. If a jurisdiction still has access to SARS-CoV-2- community incidence, using these data to guide local recommendations at the levels previously described (community incidence > or = to 100/100,000) could be considered.CDC will also continue to collect and report SARS-CoV-2 hospital admissions data on the CDC COVID Data Tracker. These data continue to be available at the county level and are used by CDC to help the public decide when masking in the community should be considered. Based on CDC analyses from data from late 2022 and early 2023, these levels might be less useful to inform masking recommendations in healthcare facilities.Using the current cutoff for masking in the community (>20 new COVID-19 admissions per 100,000 population over the last 7 days), the ability of these levels to indicate ongoing SARS-CoV-2 transmission at nursing homes (at 1 new infection per 100 resident-weeks, or higher) was low (sensitivity < 20%), although the specificity was high. Using a lower cutoff of 10 new COVID-19 admissions per 100,000 population (7-day total) increased sensitivity to about 40% but reduces specificity. CDC continues to recommend that healthcare facilities institute facility-wide masking when masks are recommended in the community.

- **Metrics Encompassing Other Respiratory Viruses**
  The RESP-NET interactive dashboard or data from the National Emergency Department Visits for COVID-19, Influenza, and Respiratory Syncytial Virus can be used to inform when respiratory virus season is beginning or ending, as described above.For more granular information, outpatient respiratory illness visits determined by data reported to ILINet, are aggregated to provide state level estimates. Cutoffs for action are not well-defined and data are reported as 13 activity levels which correspond to the number of standard deviations below, at, or above the mean for the current week compared with the mean during non-influenza weeks. Choosing a lower level will likely increase sensitivity for true increases in ILI.

Definitions:

Healthcare Personnel (HCP): HCP refers to all paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials, including body substances (e.g., blood, tissue, and specific body fluids); contaminated medical supplies, devices, and equipment; contaminated environmental surfaces; or contaminated air. HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, home healthcare personnel, physicians, technicians, therapists, phlebotomists, pharmacists, dental healthcare personnel, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).

Healthcare settings refers to places where healthcare is delivered and includes, but is not limited to, acute care facilities, long-term acute-care facilities, nursing homes, home healthcare, vehicles where healthcare is delivered (e.g., mobile clinics), and outpatient facilities, such as dialysis centers, physician offices, dental offices, and others.

Source control: Use of respirators, well-fitting facemasks, or well-fitting cloth masks to cover a person's mouth and nose to prevent spread of respiratory secretions when they are breathing, talking, sneezing, or coughing. Source control devices should not be placed on children under age 2, anyone who cannot wear one safely, such as someone who has a disability or

an underlying medical condition that precludes wearing one safely, or anyone who is unconscious, incapacitated, or otherwise unable to remove their source control device without assistance. Face shields alone are not recommended for source control. At a minimum, source control devices should be changed if they become visibly soiled, damaged, or hard to breathe through. Further information about source control options is available at: Masks and Respirators (cdc.gov)

Cloth mask: Textile (cloth) covers that are intended primarily for source control in the community. **They are not personal protective equipment (PPE) appropriate for use by healthcare personnel.** Guidance on design, use, and maintenance of cloth masks is available.

Facemask: OSHA defines facemasks as "a surgical, medical procedure, dental, or isolation mask that is FDA-cleared, authorized by an FDA EUA, or offered or distributed as described in an FDA enforcement policy. Facemasks may also be referred to as 'medical procedure masks'." Facemasks should be used according to product labeling and local, state, and federal requirements. FDA-cleared surgical masks are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures. Other facemasks, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

Respirator: A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are approved by CDC/NIOSH, including those intended for use in healthcare.

Airborne Infection Isolation Rooms (AIIRs):

- AIIRs are single-patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 12 ACH (6 ACH are allowed for AIIRs last renovated or constructed prior to 1997).
- Air from these rooms should be exhausted directly to the outside or be filtered through a HEPA filter directly before recirculation.
- Room doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized.
- Facilities should monitor and document the proper negative-pressure function of these rooms.

Immunocompromised: For the purposes of this guidance, moderate to severely immunocompromising conditions include, but might not be limited to, those defined in the Interim Clinical Considerations for Use of COVID-19 Vaccines

- Other factors, such as end-stage renal disease, may pose a lower degree of immunocompromise. However, people in this category should still consider continuing to use of source control while in a healthcare facility.
- Ultimately, the degree of immunocompromise for the patient is determined by the treating provider, and preventive actions are tailored to each individual and situation.

Close contact: Being within 6 feet for a cumulative total of 15 minutes or more over a 24-hour period with someone with SARS-CoV-2 infection.

SARS-CoV-2 Illness Severity Criteria (adapted from the NIH COVID-19 Treatment Guidelines)

The studies used to inform this guidance did not clearly define "severe" or "critical" illness. This guidance has taken a conservative approach to define these categories. Although not developed to inform decisions about duration of Transmission-Based Precautions, the definitions in the National Institutes of Health (NIH) COVID-19 Treatment Guidelines are one option for defining severity of illness categories. The highest level of illness severity experienced by the patient at any point in their clinical course should be used when determining the duration of Transmission-Based Precautions. Clinical judgment regarding the contribution of SARS-CoV-2 to clinical severity might also be necessary when applying these criteria to inform infection control decisions.

Mild Illness: Individuals who have any of the various signs and symptoms of COVID-19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain) without shortness of breath, dyspnea, or abnormal chest imaging.

Moderate Illness: Individuals who have evidence of lower respiratory disease by clinical assessment or imaging, and a saturation of oxygen (SpO2) ≥94% on room air at sea level.

Severe Illness: Individuals who have respiratory frequency >30 breaths per minute, SpO2 <94% on room air at sea level (or, for patients with chronic hypoxemia, a decrease from baseline of >3%), ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO2/FiO2) <300 mmHg, or lung infiltrates >50%.

Critical Illness: Individuals who have respiratory failure, septic shock, and/or multiple organ dysfunction.

In pediatric patients, radiographic abnormalities are common and, for the most part, should not be used as the sole criteria to define COVID-19 illness category. Normal values for respiratory rate also vary with age in children, thus hypoxia should be the primary criterion to define severe illness, especially in younger children.

More Information

Interim Clinical Considerations for Use of COVID-19 Vaccines

Management of Patients with Confirmed 2019-nCoV

Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2

Strategies to Mitigate Healthcare Personnel Staffing Shortages

Infection Control FAQ

Can employees choose to wear respirators when not required by the employer?

In situations where the use of a respirator is not required either by the employer or by an Occupational Safety and Health Administration (OSHA) standard, the employer may still offer filtering facepiece respirators or permit employees to use their own respirators as long as the employer determines that such respirator use will not in itself create a hazard. This is considered voluntary use under the Respiratory Protection Standard . CDC encourages employers to permit workers to voluntarily use filtering facepiece respirators like N95s. If an employer allows voluntary use of filtering facepiece respirators, the employer must provide users with 29 CFR 1910.134 Appendix D – Information for Employees Using Respirators When Not Required Under the Standard. See 29 CFR 1910.134(c)(2) for additional requirements applicable to voluntary respirator use.

Healthcare personnel, both paid and unpaid, should be allowed to bring their own highly protective masks (such as N95 respirators) as long as the mask does not violate the facility's safety and health requirements. They should not be asked to remove their more protective source control device (a well-fitting N95 respirator, for example) for a less protective device (such as a procedure mask) unless the mask or respirator is visibly soiled, damaged, or hard to breathe through. However, devices brought from home may not be appropriate for protecting healthcare personnel from all job hazards, and they should change to recommended personal protective equipment when indicated (for instance, before entering the room of a patient managed with Transmission-Based Precautions). Learn more about the types of masks and respirators and infection control recommendations for healthcare personnel.

What should visitors use for source control (masks or respirators) when visiting healthcare facilities?

CDC recommends that people visiting healthcare facilities use the most protective form of source control (masks or respirators) that fits well and will be worn consistently. Healthcare facilities may choose to offer well-fitting facemasks as a source control option for visitors but should allow the use of a clean mask or respirator with higher level protection by people who chose that option based on their individual preference. Masks and respirators used for source control should be changed if they become visibly soiled, damaged, or hard to breathe through. Learn more about the types of masks and respirators and infection control recommendations for healthcare personnel.

Why does CDC continue to recommend respiratory protection with a NIOSH-approved particulate respirator with N95 filters or higher for care of patients with known or suspected COVID-19?

CDC's guidance to use NIOSH-approved particulate respirators with N95 filters or higher when providing care for patients with suspected or confirmed SARS-CoV-2 infection is based on the current understanding of SARS-CoV-2 and related respiratory viruses.

Facemasks commonly used during surgical procedures will provide barrier protection against droplet sprays contacting mucous membranes of the nose and mouth, but they are not designed to protect wearers from inhaling small particles. NIOSH-approved particulate respirators with N95 filters or higher, such as other disposable filtering facepiece respirators, powered air-purifying respirators (PAPRs), and elastomeric respirators, provide both barrier and respiratory protection because of their fit and filtration characteristics.

Respirators should be used as part of a respiratory protection program that provides staff with medical evaluations, training, and fit testing.

Although facemasks are routinely used for the care of patients with common viral respiratory infections, NIOSH-approved particulate respirators with N95 filters or higher are routinely recommended for emerging pathogens like SARS CoV-2, which have the potential for transmission via small particles, the ability to cause severe infections, and limited or no treatment options. While the situation is evolving for SARS-CoV-2, CDC continues to recommend respiratory protection while the impact of new variants is being assessed.

What personal protective equipment (PPE) should be worn by individuals transporting patients with suspected or confirmed SARS-CoV-2 infection within a healthcare facility? For example, what PPE should be worn when transporting the patient to radiology for imaging that cannot be performed in the patient room?

In general, transport and movement of a patient with suspected or confirmed SARS-CoV-2 infection outside of their room should be limited to medically essential purposes. If being transported outside of the room, such as to radiology, healthcare personnel (HCP) in the receiving area should be notified in advance of transporting the patient. For transport, the patient should wear a well-fitting source control (if tolerated) to contain secretions and their body should be covered with a clean sheet.

If transport personnel must prepare the patient for transport (e.g., transfer them to the wheelchair or gurney), transport personnel should wear all recommended PPE (gloves, a gown, a NIOSH-approved particulate respirator with N95 filters or higher, and eye protection [i.e., goggles or disposable face shield that covers the front and sides of the face]). This is recommended because these interactions typically involve close, often face-to-face, contact with the patient in an enclosed space (e.g., patient room). Once the patient has been transferred to the wheelchair or gurney (and prior to exiting the room), transporters should remove their gown and gloves and perform hand hygiene.

The transporter should continue to wear their respirator. The transporter should also continue to use eye protection if there is potential that the patient might not be able to tolerate their well-fitting source control device for the duration of transport. Additional PPE should not be required unless there is an anticipated need to provide medical assistance during transport (e.g., helping the patient replace a dislodged facemask).

After arrival at their destination, receiving personnel (e.g., in radiology) and the transporter (if assisting with transfer) should perform hand hygiene and wear all recommended PPE. If still wearing their original respirator and eye protection, the transporter should take care to avoid self-contamination when donning the remainder of the recommended PPE. This cautious approach will be refined and updated as more information becomes available and as response needs change in the United States.

EMS personnel should wear all recommended PPE because they are providing direct medical care and are in close contact with the patient for longer periods of time.

What personal protective equipment (PPE) should be worn by environmental services (EVS) personnel who clean and disinfect rooms of hospitalized patients who have SARS-CoV-2 infection?

In general, minimize the number of personnel entering the room of patients who have SARS-CoV-2 infection. Healthcare facilities should consider assigning daily cleaning and disinfection of high-touch surfaces to nursing personnel who will already be in the room providing care to the patient. If this responsibility is assigned to EVS personnel, they should wear all recommended PPE when in the room. PPE should be removed upon leaving the room, immediately followed by performance of hand hygiene.

After discharge, terminal cleaning can be performed by EVS personnel. If not wearing all recommended PPE, they should delay entry into the room until time has elapsed for enough air changes to remove potentially infectious particles. After this time has elapsed, EVS personnel can enter the room and should wear a gown and gloves when performing terminal cleaning; well-fitting source control might also be recommended. Eye protection and a facemask (if not already worn for source control) should be added if splashes or sprays during cleaning and disinfection activities are anticipated or otherwise required based on the selected cleaning products. Shoe covers are not recommended at this time for SARS-CoV-2.

Which procedures are considered aerosol generating procedures in healthcare settings?

Some procedures performed on patients are more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. These aerosol generating procedures (AGPs) potentially put healthcare personnel and others at an increased risk for pathogen exposure and infection.

Development of a comprehensive list of AGPs for healthcare settings has not been possible, due to limitations in available data on which procedures may generate potentially infectious aerosols and the challenges in determining if reported transmissions during AGPs are due to aerosols or other exposures.

There is neither expert consensus, nor sufficient supporting data, to create a definitive and comprehensive list of AGPs for healthcare settings.

Commonly performed medical procedures that are often considered AGPs, or that might create uncontrolled respiratory secretions, include:

- open suctioning of airways
- sputum induction
- cardiopulmonary resuscitation
- endotracheal intubation and extubation
- non-invasive ventilation (e.g., BiPAP, CPAP)
- bronchoscopy
- manual ventilation

Based on limited available data, it is uncertain whether aerosols generated from some procedures may be infectious, such as:

- nebulizer administration*
- high flow O2 delivery

*Aerosols generated by nebulizers are derived from medication in the nebulizer. It is uncertain whether potential associations between performing this common procedure and increased risk of infection might be due to aerosols generated by the procedure or due to increased contact between those administering the nebulized medication and infected patients.

References related to aerosol generating procedures:

Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J (2012) Aerosol Generating Procedures and Risk of Transmission of Acute Respiratory Infections to Healthcare Workers: A Systematic Review. PLoS ONE 7(4); https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3338532/#!po=72.2222external iconexternal icon).

How long does an examination room need to remain vacant after being occupied by a patient with confirmed or suspected COVID-19?

The amount of time that the air inside an examination room remains potentially infectious depends on a number of factors including the size of the room, the number of air changes per hour, how long the patient was in the room, if the patient was coughing or sneezing, and if an aerosol-generating procedure was performed.

In general, it is recommended to restrict HCP and patients without PPE from entering the room until sufficient time has elapsed for enough air changes to remove potentially infectious particles.

General guidance is available on clearance rates under differing ventilation conditions.

In addition to ensuring sufficient time for enough air changes to remove potentially infectious particles, HCP should clean and disinfect environmental surfaces and shared equipment before the room is used for another patient.

Does CDC recommend the use of oral antimicrobial rinses before dental appointments to prevent the transmission of SARS-CoV-2?

Preprocedural mouth rinses (PPMR) with an antimicrobial product (e.g. chlorhexidine gluconate, povidone-iodine) have been shown to reduce the level of oral microorganisms in aerosols and spatter generated during dental procedures. Evidence from recent studies suggest that some PPMR solutions are efficacious and may temporarily decrease the viral load of SARS-CoV-2 in the oral cavity. Targeted clinical studies are currently underway to learn more about the potential role of PPMR and the prevention of SARS-CoV-2 transmission.

Because more research is needed to demonstrate the effectiveness of PPMR in preventing transmission of SARS-CoV-2 in the dental setting, CDC does not provide a recommendation for or against the use of PPMR before dental procedures. However, if PPMR are used before dental procedures, they should be used as an adjunct to other infection prevention and control measures recommended to decrease the spread of infectious diseases in dental settings. Such measures include delaying elective dental procedures for patients with suspected or confirmed SARS-CoV-2 infection until they are no longer infectious or for patients who meet criteria for quarantine until they complete quarantine.

Previous Updates

Updates as of September 23, 2022

- Updated to note that vaccination status is no longer used to inform source control, screening testing, or post-exposure recommendations
- Updated circumstances when use of source control is recommended
- Updated circumstances when universal use of personal protective equipment should be considered
- Updated recommendations for testing frequency to detect potential for variants with shorter incubation periods and to address the risk for false negative antigen tests in people without symptoms.
- Clarified that screening testing of asymptomatic healthcare personnel, including those in nursing homes, is at the discretion of the healthcare facility
- Updated to note that, in general, asymptomatic patients no longer require empiric use of Transmission-Based Precautions following close contact with someone with SARS-CoV-2 infection.
- Archived the Interim Infection Prevention and Control Recommendations to Prevent SARS-CoV-2 Spread in Nursing Homes and special considerations for nursing homes not otherwise covered in Sections 1 and 2 were added to Section 3: Setting-specific considerations
  - Updated screening testing recommendations for nursing home admissions
- Clarified the types of long-term care settings for whom the healthcare infection prevention and control recommendations apply

Updates as of February 2, 2022

Due to concerns about increased transmissibility of the SARS-CoV-2 Omicron variant, this guidance is being updated to enhance protection for healthcare personnel, patients, and visitors and to address concerns about potential impacts on the healthcare system given a surge in SARS-CoV-2 infections. These updates will be refined as additional information becomes available to inform recommended actions.

- Empiric use of Transmission-Based Precautions (quarantine) is recommended for patients who have had close contact with someone with SARS-CoV-2 infection if they are not up to date with all recommended COVID-19 vaccine doses.
  - In general, quarantine is not needed for asymptomatic patients who are up to date with all recommended COVID-19 vaccine doses or who have recovered from SARS-CoV-2 infection in the prior 90 days; potential exceptions are described in the guidance. However, some of these patients should still be tested as described in the testing section of the guidance.
- A test-based strategy and (if available) consultation with infectious disease experts is now recommended for determining the duration of Transmission-Based Precautions for patients with SARS-CoV-2 infection who are moderately to severely immunocompromised.
- Included additional examples when universal respirator use could be considered
- Additional updates that will have implications for healthcare facilities were made in the following guidance documents:
  - Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2
  - Strategies to Mitigate Healthcare Personnel Staffing Shortages
  - Interim Infection Prevention and Control Recommendations to Prevent SARS-CoV-2 Spread in Nursing Homes

Updates as of September 10, 2021

- Updated source control recommendations to address limited situations for healthcare facilities in counties with low to moderate community transmission where select fully vaccinated individuals could choose not to wear source control. However, in general, the safest practice is for everyone in a healthcare setting to wear source control.

- Updated quarantine recommendations for fully vaccinated patients who have had close contact with someone with SARS-CoV-2 infection to more closely align with recommendations for the community.
- Clarified the recommended intervals for testing asymptomatic HCP with a higher-risk exposure and patients with close contact with someone with SARS-CoV-2 infection.
- Added content from previously posted CDC guidance addressing:
  - Recommendations for fully vaccinated HCP, patients, and visitors
  - SARS-CoV-2 testing
  - Duration of Transmission-Based Precautions for patients with SARS-CoV-2 infection
  - Specialized healthcare settings (e.g., dental, dialysis, EMS)

As of February 10, 2021

- Updated the Implement Universal Use of Personal Protective Equipment section to expand options for source control and patient care activities in areas of moderate to substantial transmission and describe strategies for improving fit of facemasks. Definitions of source control are included at the end of this document.

- Included a reference to Optimizing Personal Protective Equipment (PPE) Supplies that include a hierarchy of strategies to implement when PPE are in short supply or unavailable.

As of December 14, 2020

- Added links to Frequently Asked Questions addressing Environmental Cleaning and Disinfection and assessing risks to patients and others exposed to healthcare personnel who worked while infected with SARS-CoV-2
- Described recommended IPC practices when caring for patients who have met **criteria for a 14-day quarantine based on prolonged close contact with someone with SARS-CoV-2 infection.**
- **Added reminders that:**
  - Double gloving is not recommended when providing care to patients with suspected or confirmed SARS-CoV-2 infection
  - In general, HCP caring for patients with suspected or confirmed SARS-CoV-2 infection should not wear more than one isolation gown at a time.

As of November 4, 2020

- Provided different options for screening individuals (healthcare personnel, patients, visitors) prior to their entry into a healthcare facility
- Provided information on factors that could impact thermometer readings
- Provided resources for evaluating and managing ventilation systems in healthcare facilities
- Added link to Frequently Asked Questions about use of Personal Protective Equipment

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